

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An image data filtering method for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the method comprising:

checking whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not;

generating filtering information on whether the data block requires filtering depending on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not; and

filtering the data block passed through inverse quantization and inverse transform according to the generated filtering information.

2. (currently amended): ~~The method of claim 1~~ An image data filtering method for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the method comprising:

checking whether all coefficients of pixels in a predetermined region of the data block are equal to zero or not;

generating filtering information on whether the data block requires filtering depending on whether all coefficients of pixels in the predetermined region of the data block are equal to zero or not; and

filtering the data block passed through inverse quantization and inverse transform according to the generated filtering information,

wherein the filtering information is determined according to coefficients of a pixel A located at an upper left corner of the block, a pixel B located to the right of the pixel A, and a pixel C located below the pixel A.

3. (previously presented): The method of claim 2, wherein the filtering information is set to “1”, which indicates the image data requiring filtering when any coefficient of pixels other than the pixels A, B and C of the block is not equal to “0”.

4. (currently amended): An image data filtering apparatus for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the apparatus comprising:

a checking unit to check whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not;

a generating unit to generate filtering information on whether the data block requires filtering depending on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not; and

a filtering unit to filter the data block passed through inverse quantization and inverse transform according to the generated filtering information.

5. (currently amended): ~~The apparatus of claim 4~~ An image data filtering apparatus for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the apparatus comprising:

a checking unit to check whether all coefficients of pixels in a predetermined region of the data block are equal to zero or not;

a generating unit to generate filtering information on whether the data block requires filtering depending on whether all coefficients of pixels in the predetermined region of the data block are equal to zero or not; and

a filtering unit to filter the data block passed through inverse quantization and inverse transform according to the generated filtering information,

wherein the filtering information generating unit generates the filtering information according to coefficients of a pixel A located at an upper left corner of the block, a pixel B located to the right of the pixel A, and a pixel C located below the pixel A.

6. (previously presented): The apparatus of claim 5, wherein the filtering information is set to "1" which indicates the image data requiring filtering when any coefficient of pixels other than the pixels A, B and C of the block is not equal to "0".

7. (canceled).

8. (currently amended): ~~The method of claim 1~~ An image data filtering method for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the method comprising:

checking whether all coefficients of pixels in a predetermined region of the data block are equal to zero or not;

generating filtering information on whether the data block requires filtering depending on whether all coefficients of pixels in the predetermined region of the data block are equal to zero or not; and

filtering the data block passed through inverse quantization and inverse transform according to the generated filtering information,

wherein the predetermined pixels comprise a pixel A, located at an upper left corner of the block, a pixel B, located to the right of the pixel A, and a pixel C, located below the pixel A.

9. (previously presented): The method of claim 8, wherein the filtering information comprises:

a horizontal filtering flag and a vertical filtering flag;

wherein if a coefficient of the pixel A is not equal to 0, said horizontal filtering flag and said vertical filtering flag are both set to 1;

if a coefficient of the pixel B is not equal to 0, said vertical filtering flag is set to 1; and

if a coefficient of the pixel C is not equal to 0, said horizontal filtering flag is set to 1.

10. (previously presented): The method of claim 9, wherein:

if a coefficient of any pixels of the upper boundary region of the block are not equal to zero, said vertical filtering flag is set to 1; and

if a coefficient of any pixels of the left boundary region of the block are not equal to zero, said horizontal filtering flag is set to 1.

11. (currently amended): ~~The apparatus of claim 4~~An image data filtering apparatus for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the apparatus comprising:

a checking unit to check whether all coefficients of pixels in a predetermined region of the data block are equal to zero or not;

a generating unit to generate filtering information on whether the data block requires filtering depending on whether all coefficients of pixels in the predetermined region of the data block are equal to zero or not; and

a filtering unit to filter the data block passed through inverse quantization and inverse transform according to the generated filtering information.

wherein the predetermined pixels comprise a pixel A, located at an upper left corner of the block, a pixel B, located to the right of the pixel A, and a pixel C, located below the pixel A.

12. (previously presented): The apparatus of claim 11, wherein the filtering information comprises:

a horizontal filtering flag and a vertical filtering flag;

wherein if a coefficient of the pixel A is not equal to 0, said horizontal filtering flag and said vertical filtering flag are both set to 1;

if a coefficient of the pixel B is not equal to 0, said vertical filtering flag is set to 1; and

if a coefficient of the pixel C is not equal to 0, said horizontal filtering flag is set to 1.

13. (previously presented): The apparatus of claim 12, wherein:

if a coefficient of any pixels of the upper boundary region of the block are not equal to zero, said vertical filtering flag is set to 1; and

if a coefficient of any pixels of the left boundary region of the block are not equal to zero, said horizontal filtering flag is set to 1.

14. (currently amended): The method of claim 1, wherein the predetermined region includes a predetermined number of pixels and the predetermined region is smaller than the data block.

15. (currently amended): The apparatus of claim 4, wherein the predetermined region includes a predetermined number of pixels and the predetermined region is smaller than the data block.

16. (currently amended): An image data filtering method for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the method comprising:

checking whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not;

generating information indicating whether the data block requires filtering, based on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not; and

filtering the data block passed through inverse quantization and inverse transform according to the information, if the information indicates that the data block requires filtering.

17. (previously presented): The method of claim 16, wherein if the information does not indicate that the data block requires filtering, the data block is not filtered.

18. (currently amended): An image data filtering apparatus for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the apparatus comprising:

a checking unit to check whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not;

a generating unit to generate information indicating whether the data block requires filtering, based on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not; and

a filtering unit to filter the data block passed through inverse quantization and inverse transform, if the information indicates that the data block requires filtering.

19. (previously presented): The apparatus of claim 18, wherein if the information does not indicate that the data block requires filtering, the data block is not filtered.

20. (new): The method of claim 16, wherein the predetermined region includes a predetermined number of pixels and the predetermined region is smaller than the data block.

21. (new): The method of claim 16, wherein the predetermined region is not square shaped.

22. (new): The apparatus of claim 18, wherein the predetermined region includes a predetermined number of pixels and the predetermined region is smaller than the data block.

23. (new): The apparatus of claim 18, wherein the predetermined region is not square shaped.

24. (new): The method of claim 1, wherein the predetermined region is not square shaped.

25. (new): The apparatus of claim 4, wherein the predetermined region is not square shaped.